

A RARE CASE OF IRREDUCIBLE LATERAL SUBTALAR DISLOCATION WITH POSTERIOR TIBIALIS TENDON ENTRAPMENT

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ABSTRACT

Pure acute external subtalar dislocation due to incarceration of the posterior tibial tendon is a very rare lesion. The external variant is exceptional. Medial astragalo-scapho-calcaneal dislocation is defined as a loss of anatomical relationship between the astragalus, calcaneus and scaphoid, but tibio-peroneo-astragalar congruence is maintained. The diagnosis is initially clinical, confirmed by X-rays of the foot and ankle, but a three-dimensional CT scan provides a complete assessment of the lesions, looking for associated osteocartilaginous lesions, to determine the therapeutic orientation and surgical planning. The reduction must be performed urgently under anesthesia. If orthopedic reduction proves impossible, surgical treatment can achieve anatomical reduction by removing obstacles in cases of irreducibility or coercibility, and osteosynthesis in the case of associated fractures. By intervening quickly we can often prevent or minimize the complications that can arise following the dislocation. We report the case of a young patient with a subtalar dislocation caused by incarceration of the posterior tibial tendon, who was treated in our structure.

KEYWORDS: Incarceration, Posterior tibial muscle, Medial subtalar dislocation, Case Report.

INTRODUCTION

External subtalar dislocation due to incarceration of the posterior tibial tendon is an extremely rare entity, and always the result of high-energy trauma. The combination of forced inversion of the foot, plantar flexion and axial loading is the mechanism responsible for this lesion. The faster the treatment, the better the prognosis(1).

We report a case of pure external subtalar dislocation due to incarceration of the posterior tibial tendon following a fall from a horse.

The importance of the case

External subtalar dislocation by incarceration of the posterior tibial tendon is an extremely rare lesion.

CASE PRESENTATION

This is a young 30-year-old patient with no significant pathological history. He was admitted to the emergency department following a trauma to the left ankle during a fall from a horse with landing on the left ankle in inversion.

The Clinical examination on admission revealed intense pain on palpation and at the slightest mobilization, with

functional impotence of the left lower limb, deformation of the mid-tarsal region with edema of the ankle, without skin or vascular-nervous lesion (Figure 1).



Fig. 1: Clinical aspect of the foot trauma.

The Standard radiographs revealed a pure medial subtalar dislocation. Complementary CT scans confirmed the diagnosis of a pure lateral subtalar dislocation with no associated fracture. (Figure 2)



Fig. 2: Ragioraphic images showing subtalar dislocation

An emergency reduction of the dislocation was attempted in the operating theatre under general anaesthetic. After unsuccessful orthopedic reduction, an anteromedial approach was performed, centered on the tibiotalar joint, which had been explored for

incarceration of the posterior tibial tendon. After freeing the joint, the ankle was reduced using the boot puller maneuver, and was stable on testing (Figure 3 and Figure 4).



Fig. 3: Clinical image showing incarceration of the tibialis anterior muscle after surgical approach to the joint.



Fig. 4: Clinical image showing good joint congruence after release of the tibialis anterior muscle.

A follow-up X-ray showed good joint congruence after reduction (Figure 5). Complementary compression with a plastered boot without support was carried out and maintained for a period of six weeks, followed by

rehabilitation of the ankle. The functional result was excellent with a follow-up of 6 months and the return to sport was authorized after 3 months.



Fig. 5: Control x-rays of the ankle at 3 months showing good joint congruence

CLINICAL DISCUSSION

External subtalar dislocation through incarceration of the posterior tibial tendon is an extremely rare entity, and

always the result of high-energy trauma. There is no literature on this rare case (subtalar dislocation due to incarceration of the posterior tibial muscle). However, subtalar dislocation accounts for 1 to 2% of all

dislocations.^[1] The medial variety is the most frequent, and the fact that inversion is the main position of foot instability explains this high frequency. The combination of plantar flexion and forced inversion of the foot caused by high-energy trauma with axial loading is the most frequent cause of this injury.^[2] A forceful inversion causes capsulo-ligament failure, leading to the risk of ankle dislocation or fracture.^[3] Fahey and Murphy's study showed that plantar flexion and inversion of the foot resulted in medial subtalar dislocation, as in our patient's case.^[4] According to Dominic Chicoine The posterior tibial tendon is the only tendon in the human body that has the capacity to lengthen permanently without rupturing. The main action of the posterior tibial tendon is inversion and plantar flexion of the foot.^[5] Diagnosis is generally straightforward. Clinically, the deformity is major and the foot is fixed in eversion. Swelling and edema appear rapidly and may mask the deformity. The diagnosis is confirmed by a standard profile X-ray, but above all a frontal X-ray showing the talus in place in the tibio-fibular mortise, while the foot is displaced medially. A CT scan can confirm the diagnosis and assess associated osteo-cartilaginous lesions, present in 20-30% of cases.^[6] Urgent reduction is essential for all authors, to prevent complications such as neurovascular lesions, overlying skin necrosis, chondrolysis and avascular necrosis of the talus. Reduction is best performed while the patient is under general anaesthetic, allowing complete muscle relaxation.^[7] However, in the literature, bloody reduction may be necessary due to incarceration of the fibula behind the tibia. After reduction, stress radiographs can assess the integrity of the ankle ligaments. In the case of our patient, we opted for open reduction after failure of reduction by external manoeuvres. the lesion assessment had shown incarceration of the posterior tibial Surgical treatment enables anatomical reduction to be achieved by removing obstacles in the case of irreducibility or incoercibility, and by performing osteosynthesis in the case of associated fractures. The functional results of tibiotalar dislocation are generally good, sometimes with persistent swelling. with occasional persistent swelling, but complications such as chronic ankle instability and tibiotalar osteoarthritis.^[8]

CONCLUSION

Subtalar dislocation due to incarceration of the posterior tibial tendon is a very rare lesion, often caused by violent trauma, for which adequate emergency treatment is the only guarantee of a good long-term outcome. Our case illustrates the role of surgical treatment in the management of this lesion.

The case report follows scare guidelines.^[11]

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